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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,643	06/30/2000	Ralf Wolleschensky	GK-ZEI-3092/500343.20085	9448

26418 7590 04/10/2003

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EXAMINER

GILL, ERIN M

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/607,643

Applicant(s)

WOLLESCHENSKY ET AL.

Examiner

Erin-Michael Gill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 1-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,7.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 8.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 24, 26, 32, 33, 35, and 41 objected to because of the following informalities:
2. Claim 24 "another dispersive element" should be "an element".
3. Claim 26 "the dispersive element" should be "the element for spatially superimposing".
4. Claim 32 reference character "F" should be deleted.
5. Claim 33 "the single-mode fiber" should be "a single-mode fiber".
6. Claim 35 "the measurement signal" should be "a measurement signal".
7. Claim 41 "the pulse front" should be "a pulse front"; "the spherical aberration" should be "spherical aberration"; and "adaptive element AO" should be "adaptive acousto-optic element".
8. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. In *Ex parte Lyell*, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990). See MPEP 2173.05(p) section II.

### ***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 24-26, 29-31, 34-40, 42-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Silberberg et al. US Patent No. 6327068 (hereafter Silberberg). The claims are copied below and specific references within Silberberg will be noted parenthetically.

13. Regarding claim 24, Silberberg teaches a device comprising, a dispersive element for spatially separating the spectral components of the laser radiation (Figure 1 Ref. No. 14); means for manipulating individual spectral components (Figure 1 Ref. No. 18); and another dispersive element for spatially superimposing the manipulated individual spectral components (Figure 1 Ref. No. 15).

14. Regarding claim 25, Silberberg teaches, a device according to claim 24, wherein said manipulating means acts to manipulate components (Abstract).

15. Regarding claim 26, Silberberg teaches, a device according to claim 24, wherein, after manipulation, the spectral components are reflected at a mirror and superimposed again by the dispersive element (Unnumbered mirror of Figure 5 and beam splitter 22 of Figure 1).

16. Regarding claim 29, Silberberg teaches, a device according to claim 24, wherein prisms or gratings are used as dispersive elements (Figure 1 Ref. No. 14, 15).

17. Regarding claim 30, Silberberg teaches, a device according to claim 24, wherein the manipulator means generates an amplitude modulation of the spectral components (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

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18. Regarding claim 31, Silberberg teaches a device according to claim 24, wherein the manipulator means generates a phase modulation of the spectral components (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

19. Regarding claim 34, Silberberg teaches, a device according to claim 24, wherein a spatial light modulator is used in the Fourier plane as a manipulator means (Figure 1 reference number 18).

20. Regarding claim 35, Silberberg teaches, a device according to claim 24, wherein the manipulator means is purposefully optimized by feeding back a measurement signal and the desired measurement signal is therefore adjusted (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

21. Regarding claim 36, Silberberg teaches, a device according to claim 31, wherein the phase modulation in the manipulator means is used to compensate higher-order dispersion by the use of the feedback (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

22. Regarding claim 37, Silberberg teaches, a device according to claim 31, wherein the phase modulation in the manipulator means is optimized depending on the center wavelength of the short pulse laser by the use of feedback (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

23. Regarding claim 38, Silberberg teaches, a device according to claim 31, wherein the phase modulation in the manipulator means is optimized depending on the utilized objective by the use of the feedback (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

24. Regarding claim 39, Silberberg teaches, a device according to claim 31, wherein the phase modulation in the manipulator means is optimized depending on the utilized average output by the use of feedback (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

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25. Regarding claim 40, Silberberg teaches, a device according to claim 31, wherein, by the use of feedback, the phase modulation in the manipulator means is adjusted depending on the depth of penetration into a preparation to be examined and a nonlinearly excited fluorescence signal is therefore optimized (Col 4 lines 27-31).

26. Regarding claim 42 Silberberg teaches, a device according to claim 31, wherein the phase modulation in the manipulator means is optimized depending on the utilized objective by the use of feedback (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

27. Regarding claim 43, Silberberg teaches, a device according to claim 24, wherein a specific excitation of fluorescence dyes is carried out by phase modulation and amplitude modulation in the manipulator means (Col 4 lines 27-31).

28. Regarding claim 44, Silberberg teaches, a device according to claim 42, wherein the optimization is carried out selectively. (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

29. Regarding claim 45, Silberberg teaches, a device according to claim 24, wherein a specific resolution of reactions in the fluorescence dyes is carried out by phase modulation and amplitude modulation in the manipulator means (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

30. Regarding claim 46, Silberberg teaches, a device according to claim 24, wherein a specific bleaching of dyes is carried out by phase modulation and amplitude modulation in the manipulator means (Figure 5, Col. 9 lines 25-43, and Col. 5 lines 3-7).

### ***Claim Rejections - 35 USC § 103***

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claims 27, 32, 33, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al. US Patent No. 5995281 (hereafter Simon) in view of Silberberg.

33. Regarding claim 27, Simon Figures 1, 2, and 3 show a device for coupling a short pulse laser into a laser scanning microscope beam path (abstract) comprising prisms or gratings for spatially separating the spectral components of the laser radiation (7.1, 8.2); and other prisms or gratings (7.3, 7.4, 8.4, 8.3).

34. Regarding claim 32, Simon claim 4 teaches the light being "effected via at least one monomode fiber". A monomode fiber is equivalent to a single mode fiber, Official notice taken.

35. Regarding claim 33, Simon Col 6 lines 8-13 teaches that the "polarization...is identical in every reflection". This is equivalent to the inclusion of a single mode fiber which is polarization preserving. Official notice taken.

36. Regarding claim 41, Simon Col. 4 lines 8-25 teaches the pulse front and the spherical aberration are optimized additionally by an adaptive acousto-optic element.

37. However, with regards to all of these claims, Simon fails to teach the inclusion of a means for manipulating individual spectral components within the apparatus.

38. Silberberg teaches the manipulating means for adjusting individual components (figure 1 reference number 18).

39. It would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the manipulating means of Silberberg into the apparatus of Simon because the later invention of Silberberg was designed expressly for controlling the pulse in a short pulse

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laser, a problem which was stated in Simon (Col 1 lines 24-33), and such an incorporation of which would allow better control of the pulse in a short pulse laser.

*Conclusion*

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin-Michael Gill whose telephone number is 703-305-7858.


The examiner can normally be reached on M-F (8:30-5:00 EST).

41. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

42. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



EMG  
April 7, 2003



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